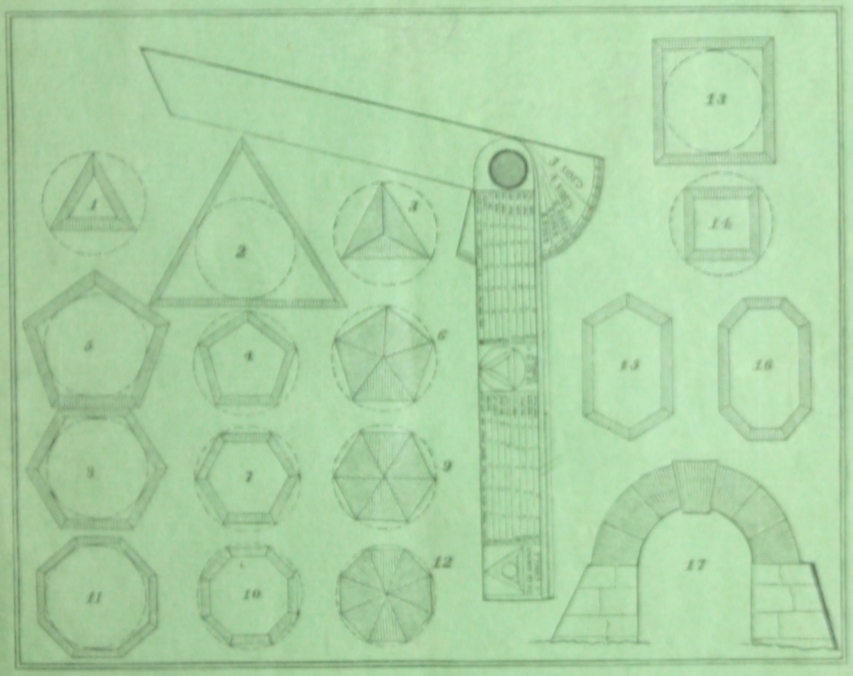
THOMPSON'S

PATENT MITRE BEVEL GAUGE.



FOR SALE BY

CHARLES A. MILLER,

SOLE AGENT,

No. 415 Commerce Street,

PHILADELPHIA.

From Bryson's Printing Rooms, 2 North Sixth Street.

THOMPSON'S

PATENT MITRE BEVEL GAUGE,

FOR HOUSE AND SHIP CARPENTERS, CABINET-MAKERS, MILLWRIGHTS,

AND ALL

WORKERS IN WOOD,

GIVING THE

MITRE FOR ANY SHAPE FRAME,

AND THE

LENGTH OF EACH PIECE.

L. E. YORKE & CO.

Proprietors.

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Notice.

Since this book was printed an improvement has been made in the instrument, which requires a change in the EXPLANATION, viz.:

Instead of setting the lines on the arc to the side of the stock, as there directed, set whatever one you want straight with the line on the brass plate in the Slot Hole.

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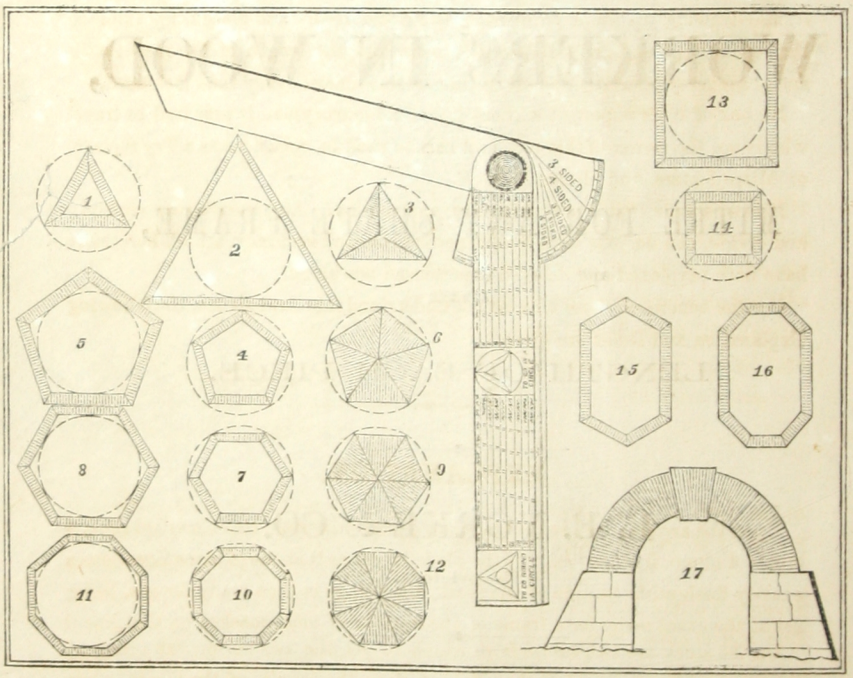
PATENT MITRE BEVEL GAUGE.



THOMPSON'S MITRE BEVEL GAUGE.

This Instrument entirely overcomes the difficulties and delays, which House and Ship-carpenters, Cabinet-makers, Millwrights and others, have heretofore experienced in making any polygonal or many sided frame or figure.

With this Gauge, it is as easy to make any frame from 3 to 16 sides, of any diameter or side whatever, as it is to make a square.

It entirely does away with the necessity of describing a circle, subdividing it, and drawing the frame required, with all the trouble and inaccuracy liable to that operation ; and gives at once the mitre and the length of the pieces with entire accuracy ; saving its cost in time, alone, almost every time it is used.

No box of tools is perfect without it, and no journeyman is prepared to travel who is not the owner of this tool. It can be used on occasions as a Try Square, or Mitre Square, and Sliding T bevel.

It is so simple that it scarce requires explanation. Any one who can multiply and divide, can do jobs with it with perfect ease and accuracy, which heretofore have both perplexed and delayed experienced workmen.

For the benefit of those who do not understand it at first glance, the following Explanation and Rules are given.

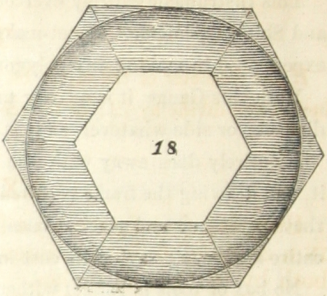
EXPLANATION.

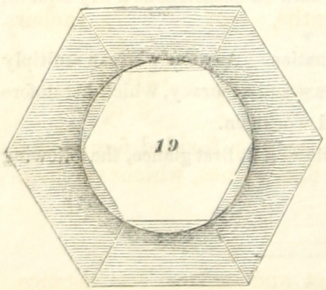
Upon the arc attached to the blade, are inscribed certain lines, marked thus, 3 SIDED, 4 SIDED, 5 SIDED, &c. If the blade be set so that one of these lines comes exactly flush with the side of the stock, the Gauge is then ready for use, being set at the exact mitre for a frame of the number of sides marked on that line.

On the stock are two tables from which to get the LENGTH OF THE PIECES of the required frame. One of these tables gives the length of the pieces, when the frame is fitted ROUND a circle of one foot diameter. The other gives the length when the frame is fitted IN a circle of one foot diameter. Take from the table the number corresponding to the shaped frame required ; multiply it by the diameter of the frame required, and the result is the length of each piece of the frame wanted. When the frame is to fit ROUND a circle, see figures 2, 5, 8, 11 and 13 ; this length will be the INSIDE or short side of each piece. When the frame is to fit IN A CIRCLE, it will be the length of the OUTSIDE of each piece. See figures 1, 4, 7, 10 and 14.

When making a frame for any of the following uneven sided figures, viz: 7 sided, 9 sided, 11 sided, 13 sided, and 15 sided; The table of lengths corresponding to those shapes, will be found in this book.

If the required frame is to be circular outside; as a well curb, or the centering of an arch. Take the length from the table marked 'ROUND A CIRCLE,' and make this measure the OUTSIDE or longest side of each Piece. Then round off the corners and it is done. See Figures 18 and 17.





If the required frame is to be circular INSIDE, get the length from the table marked 'IN A CIRCLE;' make this measure the INSIDE of each piece; then round to suit the corners, and the thing is done. See Figures 19 and 17. To make a frame circular both inside and out, apply both these rules.

The lengths in the tables are marked both in DECIMALS or TENTHS, and in INCHES, and for the convenience of those using the former, there is a scale of tenths on the opposite side of the stock from the tables.

The Inches are marked to the nearest 16th. It is very rare that a Carpenter is called upon to do work, in which a fraction of a sixteenth, more or less, will make any difference. When, however, a Carpenter has some extraordinarily neat and accurate work to do, he can use the tenths, which are correct to the half thousandth of a foot.

The following are three very simple rules for beginners to find the lengths required from the tables.

FIRST.

If the diameter of the circle the frame is intended to fit, be an even number of feet, simply multiply the number in the table by that number of feet. The result is the length of the pieces required.

SECOND.

If the diameter of the circle be feet and inches, multiply by duo-decimals as in ordinary carpenter work; or, if tenths are preferred, reduce the inches to tenths and multiply as before.

THIRD.

If the diameter of the circle be less than a foot, multiply by the number of inches and divide by 12; or reduce the inches to tenths and multiply.

EXAMPLES.

Suppose, (see figure 4,) a five sided frame is to be made to fit IN a circle of 6 feet in diameter. The following is the calculation both by tenths and inches. Take from the table the number corresponding to a five sided figure 'IN A CIRCLE,' this number is

	.588′ in tenths,	or	$7\frac{1}{16}$ inches.
Multiply by diameter.	6		6
	3.528 ft.		12)$42\frac{6}{16}$
			$3.'6\frac{3}{8}''$

That is, the outside length of each piece of a 5 sided figure of 6 feet diameter, is 3.528 feet, or 3 feet $6\frac{3}{8}$th inches, whichever measurement may be preferred.

If the diameter of the circle be feet and inches; for instance, 6 feet, 9 inches.

Table number is	·588′	or	$7\frac{1}{16}$ inches.	$7\frac{1}{16}$
6′.9 in. reduced to tenths, is	6.75′		6 feet.	9 in.
	2940		$42\frac{6}{16}$	12)63
	4116		$5\frac{5}{16}$	$5\frac{5}{16}$
	3528		12)$47\frac{11}{16}$	
L'th in ft. and tenths =	3.96900′			

Length in feet and inches = 3 ft. $11\frac{11}{16}$ inches.

If the diameter is not so much as a foot, say seven inches.

Table number,	·588′	or	$7\frac{1}{16}''$
7 inches reduced to tenths,	·583′		7
	1764		12)$49\frac{7}{16}$
	4704		$4\frac{1}{8}$ in.
	2940		
	·342804′		

Thus the length of each side is ·343 in tenths, or $4\frac{1}{8}$ inches.

TABLE OF LENGTHS

For Uneven Sided Frames above 5.

Round a circle. See Figures 2, 5, 8 and 11.	7	sides,—For each foot in diameter, each side is				·482′	or $5\frac{12\frac{1}{2}}{16}$	inches.
	9	"	"	"	"	·364′	" $4\frac{6}{16}$	"
	11	"	"	"	"	·294′	" $3\frac{8\frac{1}{2}}{16}$	"
	13	"	"	"	"	·246′	" $2\frac{15\frac{1}{4}}{16}$	"
	15	"	"	"	"	·213′	" $2\frac{9}{16}$	"
In a circle. See Figures 1, 4, 7 and 10.	7	sides,—For each foot in diameter, each side is				·434′	or $5\frac{3\frac{1}{2}}{16}$	inches.
	9	"	"	"	"	·342′	" $4\frac{1\frac{1}{2}}{16}$	"
	11	"	"	"	"	·282′	" $3\frac{6}{16}$	"
	13	"	"	"	"	·239′	" $2\frac{14}{16}$	"
	15	"	"	"	"	·208′	" $2\frac{8}{16}$	"

OBLONG FRAMES.

To make an oblong frame of any number of sides. See figures 15 and 16. Get from the table the length corresponding to the number of sides the frame is to be. Multiply it by the *width* of the frame, and it will be the length of all the sides except two. Then add to this length the difference between the length and breadth of the frame. The result will be the length of the other two sides. The Gauge set at the number of sides the frame is to be, gives the mitre.

CABINET-MAKERS will see that by varying the length of their pieces, they can, at once, and without difficulty, make any irregular shaped frames for pictures, looking glasses, &c.

THE QUADRANT OF DEGREES.

Upon the edge of the arc is a carefully divided and accurate Quadrant of Degrees, by which lines may be drawn, or pieces of timber set, at any required angle with each other. This is the plainest and easiest possible adaptation of degrees to the use of Carpenters, making the Gauge a convenient, accurate and necessary Instrument in Drafting and in all sorts of Framing. Carpenters who use it, discover constantly, new applications wherein it saves much time, trouble and labor.

FOR OUTSIDE OF COLUMNS.

The Gauge can be set for the outside of Columns, thus: Suppose the Column is 8 sided; set the blade at 45°: it is then set right, but the arc is in the way of applying it. To get the arc out of the way, set the Gauge against the straight edge of a board and mark a line as if for a mitre; then turn the Gauge upside down, which reverses the blade, set the blade to the line just marked, screw it up, and you have a try-square, or a try-bevel, as you may choose to call it, for the two sides of an 8 sided Column. The arc can be gotten out of the way thus, whenever it interferes.

Angles for the sides of certain Columns.

Hexagonal,	or 6	sided	Column,	60 degrees.
Octagonal,	" 8	"	"	45 "
Decagonal,	" 10	"	"	36 "
Duodecagonal,	" 12	"	"	30 "

A LITTLE GENERAL INFORMATION.

This progressive age is fast beginning to adopt, and appreciate the advantage of the decimal or tenth division in everything. By Law, weights and measures are thus divided in France. Our government has adopted the decimal currency. Our Surveyors have abandoned roods and perches for acres and tenths: and it is now fast beginning to be a necessity, that a Carpenter shall understand working by decimals or tenths, as well as by the duo-decimal or inch system. As soon as this becomes general, and the great advantage of the decimal division is generally understood, good bye to inches; they will go the way of roods and perches, and be heard of no more. And with them will go all the tribulation brought upon beginners by the fractions and complex fractions without end, of the inch system.

To Reduce Inches to Tenths, and Tenths to Inches.

An inch is $\frac{1}{12}$th of a foot. A tenth, is $\frac{1}{10}$th of a foot. Therefore, inches multiplied by 10, and divided by 12, make tenths. And tenths multiplied by 12 and divided by 10, make inches. Thus,

6 inches.

10

12)60

5 tenths.

5 tenths.

12

10)60

6 inches.